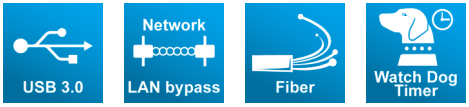
ANR-IB75N2 Series

Networking Rackmount Server

B75 PCH, 8x RJ45 GbE LAN (2-pair bypass), 0/2/4 SFP fiber GbE (w/o bypass)



User Manual

Acrosser Technology Co., Ltd.
www.acrosser.com

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Purpose

This document is intended to provide the information about the features and use of the product.

Audience

The intended audiences are technical personnel, not for general audiences.

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1. Introduction

The ANR-IB75N2 Series is designed for rack-mounted platform in networking appliance, e.g. VPN, SSL, UTM or firewall. With 3rd Generation Intel Core i7/i5/i3 Processors / Pentium CPU, and eight 10/100/1000Mbps LANs, ANR-IB75N2 Series is a powerful platform to satisfy various applications, sufficient for the small to middle size business security solution.

1.1. Specifications

General

CPU Support	• 3rd Generation Inter Core i7 Processors i7-3770 • 3rd Generation Inter Core i5 Processors i5-3550S • 3rd Generation Inter Core i3 Processors i3-3220 • Intel Pentium Processor G2120
Chipset	• Intel PCH B75
BIOS	• Support console re-direction • Support bypass setting(default disable) • Support boot from LAN(RJ45 LAN1~LAN8)
Memory	• 2 x DIMM sockets support DDR3 1333/1600 up to 16GB

Network Interface

Ethernet	• 8 x RJ45 • 0/2/4 x SFP • Intel I210-AT (10/100/1000Mbps) (LAN1~LAN8) • Intel 82576EB (10/100/1000Mbps) (F1~F4)
LAN by-Pass	• LAN1/LAN2, LAN3/LAN4 support by-pass • Reserve 1 x 3-pin Jumper for hardware select bypass status
GPIO	• 8-bit GPIO (4-In, 4-Out)

Storage

CF	• 1 x Compact Flash Type II socket support UDMA
HDD	• 2 x 2.5” HDD bay
SATA	• 1 x SATA-2 port (SATA2) • 1 x SATA-3 port (SATA1)

Communication and I/O

Front Panel	• LCM module • Up, Down, Left, Right key pad • Reset button • Power LED/HDD/bypass 1 & 2: Green/Green/Yellow/ Yellow • 0/2/4x SFP (F1~F4) • COM port (RJ45) • 2 x USB 3.0 • LAN 8/7/6/5/4/3/2/1
Internal I/O	• 1 x 7-pin 2.54mm for LCM • 1 x 8-pin 2.54mm for CPLD update • 2 x 5-pin 2.00mm for VGA • 2 x 5-pin 2.54mm for 8-bit GPIO (4-In, 4-Out) • 1 x ATX 24-pin power input • 1 x ATX12V 4-pin power input

Others

Watchdog Timer	• Software programmable 0~255 Seconds, 0 = Disable Timer
Battery	• Lithium battery, 3V 220mAH (CR2032)
Hardware Monitoring	• CPU Voltage • CPU and System Temperature • CPU Fan Speed
OS Support	• Fedora 14 (32/64 bit) • Ubuntu 10.04 (32/64 bit) • Windows 7 (32/64 bit) • Windows 7 Embedded (32 bit)

Mechanical

Dimension	• 440 x 317.5 x 44 mm
Operating Temperature	• 0 ~ 40°C (32 ~ 104°F)
Storage Temperature	• -20 ~ 80°C (-4 ~ 176°F)
Relative Humidity	• 0 ~ 90% @ 40°C, non-condensing
Power Supply	• Standard ATX power (250W~300W)

1.2. Package Contents

Check if the following items are included in the package.

- ☐ 1 x ANR-IB75N2, ANR-IB75N2A, or ANR-IB75N2B System
- ☐ 1 x Quick Manual
- ☐ 2 x SATA Cable
- ☐ 1 x Driver CD
- ☐ 1 x Console Cable (RJ45)
- ☐ 1 x Power Cord
- ☐ 2 x Rack Bracket
- ☐ 1 x Box Packing
- ☐ 14 x Screws for Bracket (for Rack + HDD bracket)
- ☐ 1 x Power Cord Hook

1.2.1. Model Type

Model	Description
ANR-IB75N2	• 8 GbE LANs, 0 fiber LANs
ANR-IB75N2A	• 8 GbE LANs, 2 fiber LANs
ANR-IB75N2B	• 8 GbE LANs, 4 fiber LANs

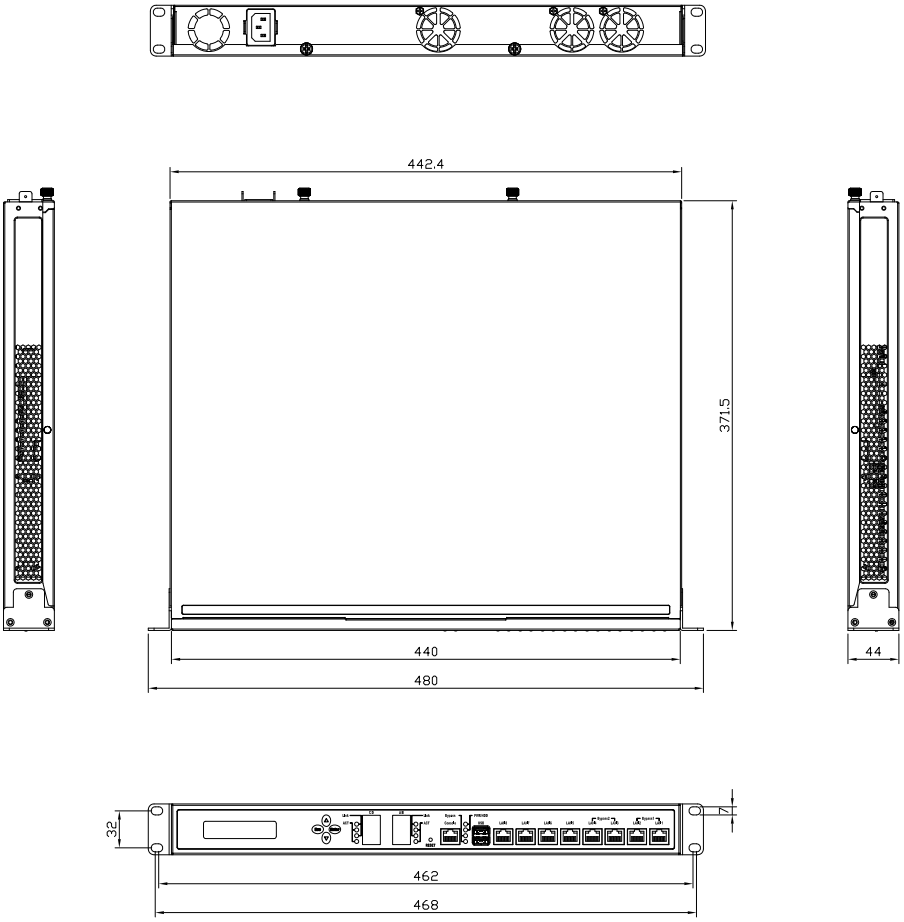
1.2.2. Optional CPU List

Model	Description
ANR-IB75N2/A/Bi71	• 3rd Generation Inter Core i7 Processors i7-3770
ANR-IB75N2/A/Bi51	• 3rd Generation Inter Core i5 Processors i5-3550S
ANR-IB75N2/A/Bi31	• 3rd Generation Inter Core i3 Processors i3-3220
ANR-IB75N2/A/BPG1	• Intel Pentium Processor G2120

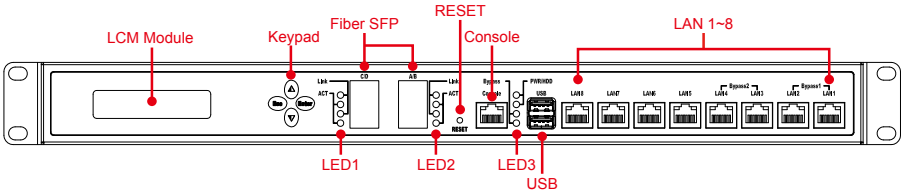
1.3. System Dissection

1.3.1. Dimension

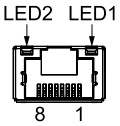
(Unit: mm)



1.3.2. Front Panel

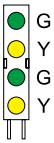


RJ45 LAN Connector



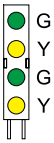
LED	Light	Status
LED1	Off	10Mbps
	Green	100Mbps
	Orange	1000Mbps
LED2	Yellow	Link
	Blink	Link with Activity
	Off	No Link

LED1: SFP Status LED Display



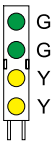
LED	Light	Status
G	Green	Link LED
Y	Yellow	Active LED
G	Green	Link LED
Y	Yellow	Active LED

LED2: LAN Status LED Display



LED	Light	Status
G	Green	Link LED
Y	Yellow	Active LED
G	Green	Link LED
Y	Yellow	Active LED

LED3: Status/HDD/Power LED Display

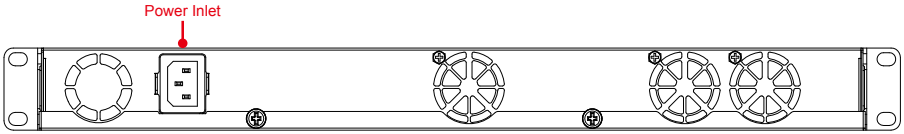


LED	Light	Status
G	Green	Power On LED
G	Green	HDD LED
Y	Yellow	LAN3 & LAN4 Bypass LED
Y	Yellow	LAN1 & LAN2 Bypass LED

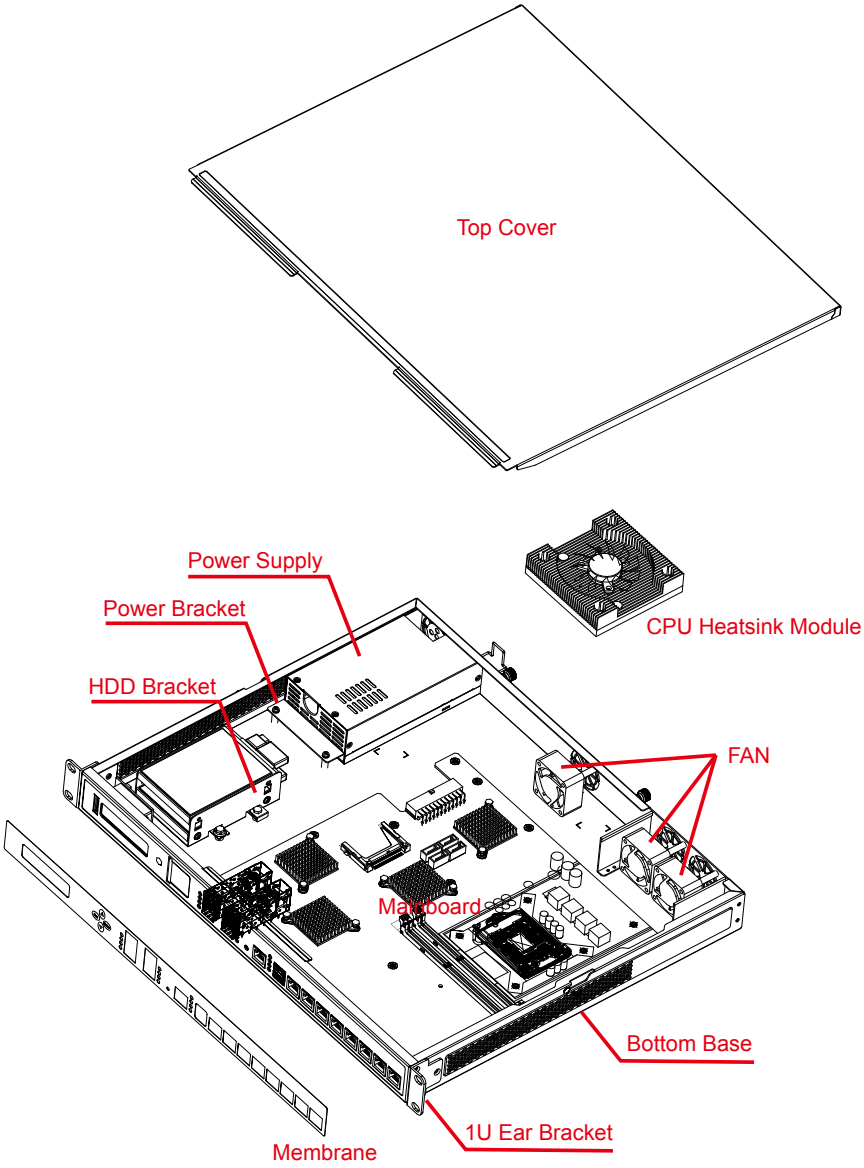
RESET: System Reset Button

Push this button to reset the system.

1.3.3. Rear Panel



1.3.4. System Configuration



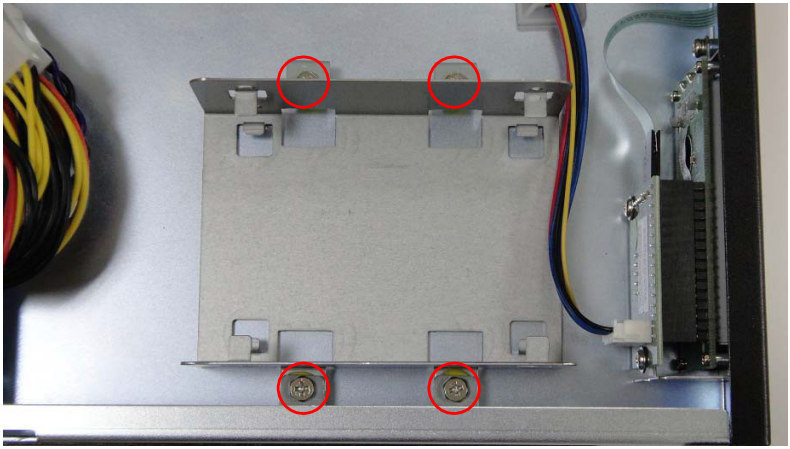
2. Components Assembly

2.1. 2.5” HDD Installation

The following instructions will guide you to install 2.5” HDD step-by-step.

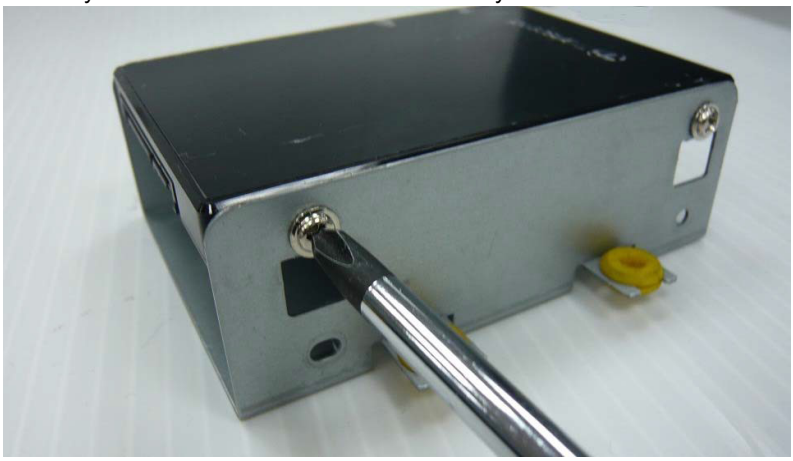
Step 1: Unfasten 2 screws of chassis top cover. Pull the top cover backward and then pull up to lift it up.

Step 2: Release HDD bracket by unfastening 4 screws. Keep these 4 bracket screws.

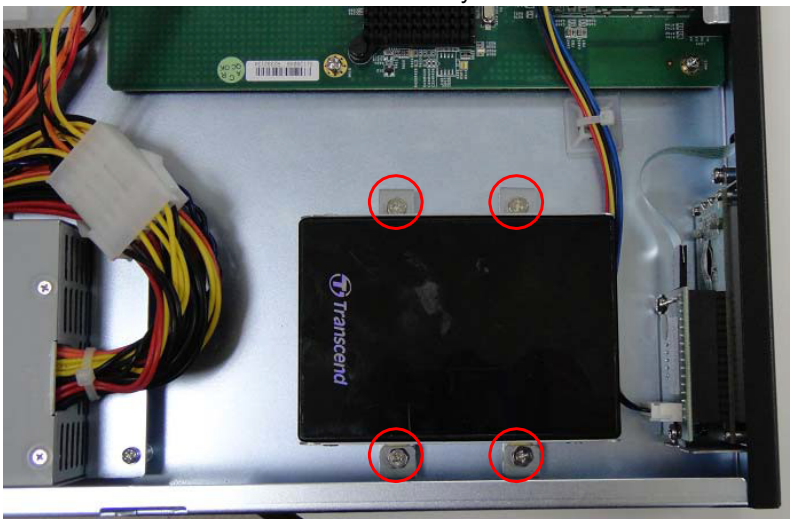


Step 3: Take out 4 HDD screws from the ANR-IB75N2 Series package.

Step 4: Fasten your 2.5” HDD onto the HDD bracket by these 4 screws.

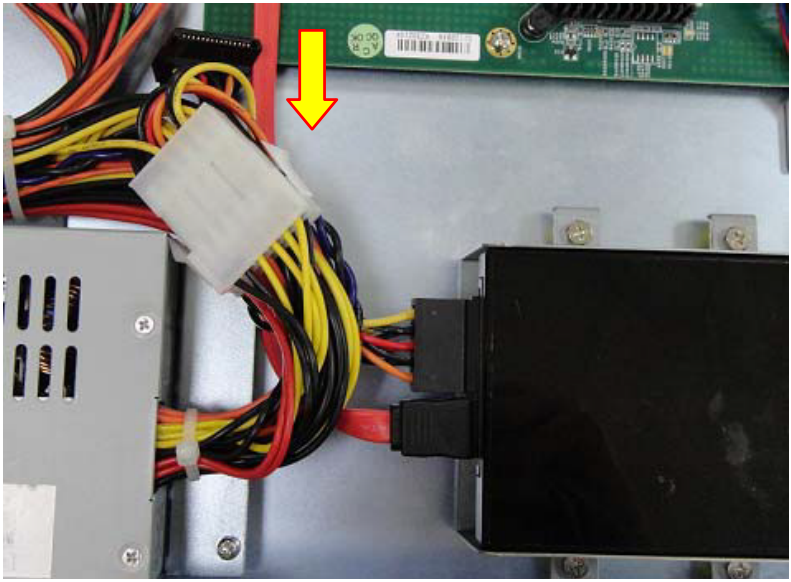


Step 5: Fasten the HDD bracket onto the chassis by 4 bracket screws.

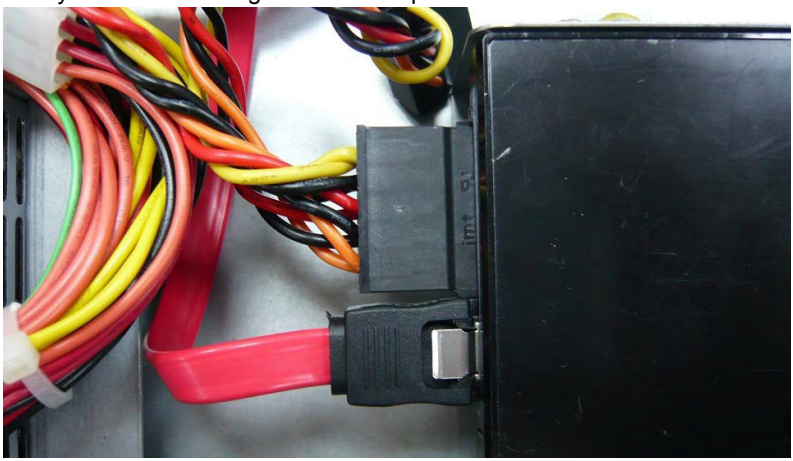


Step 6: Plug 2 SATA cables to port [SATA1] or [SATA2] on mainboard.
([SATA1] is for SATA-3, [SATA2] is for SATA-2.)

Step 7: The SATA cable MUST go under the power cables.



Step 8: Firmly connect SATA signal cable and power cable to HDD module.



Step 9: Assemble top cover by fastening 2 screws.

2.2. CF Card Installation

Step 1: Open the top cover (same as previous steps).

Step 2: Push your CF card into CF socket.

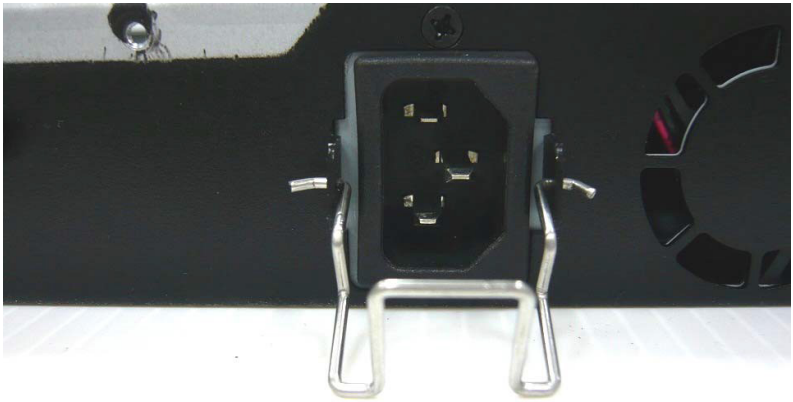
Step 3: The CF card is firmly installed.

2.3. Power Cord Hook Installation

Step 1: Take out the hook from the ANR-IB75N2 Series package.

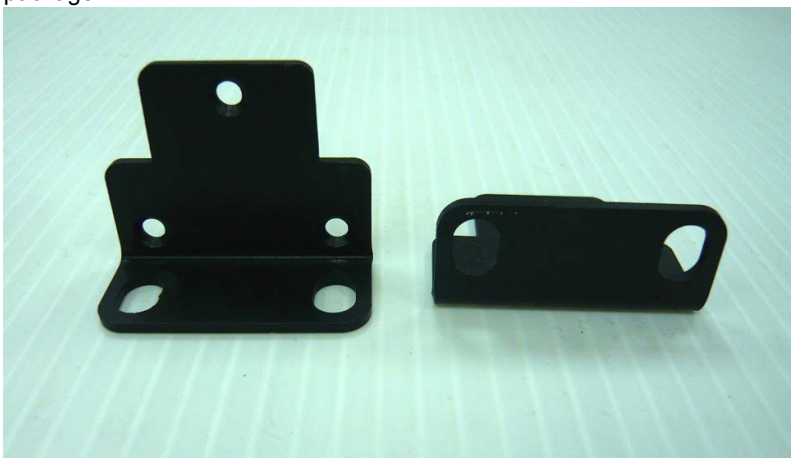
Step 2: Insert one end of the hook into the right-side hole first.

Step 3: Then insert the other end of the hook into the left-side hole.

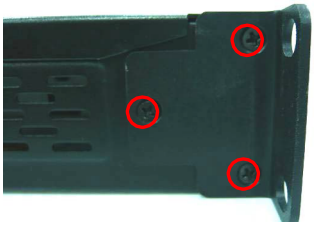


2.4. Rack Bracket Installation

Step 1: Take out 6 screws and 2 rack brackets from the ANR-IB75N2 Series package.



Step 2: Fix the rack brackets to chassis by fastening 6 screws.



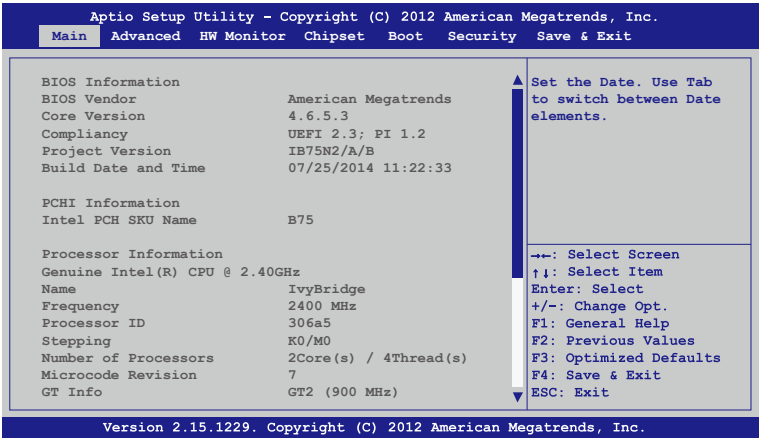
3. BIOS Settings

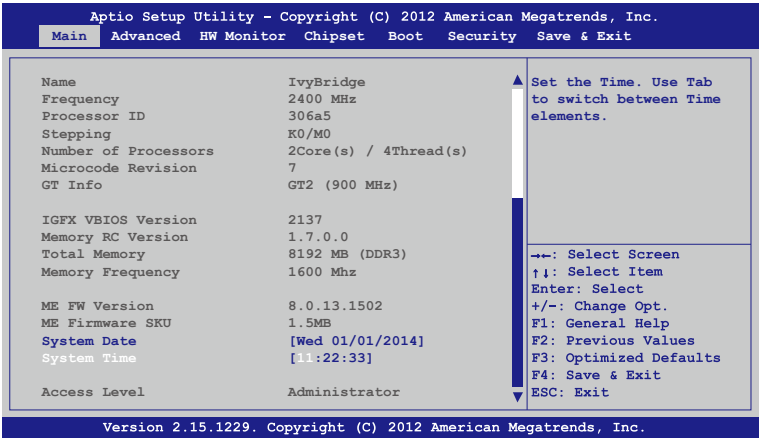
This chapter describes the BIOS menu displays and explains how to perform common tasks needed to get the system up and running. It also gives detailed explanation of the elements found in each of the BIOS menus. The following topics are covered:

- Main Setup
- Advanced Setup
- HW Monitor
- Chipset Setup
- Boot Setup
- Security Setup
- Save Exit Setup

3.1. Main Setup

Once you enter the AMI BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. Use the arrow keys to highlight the item and then use the <+> <-> keys to select the value you want in each item.


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced HW Monitor Chipset Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 4.6.5.3
Compliancy UEFI 2.3; PI 1.2
Project Version IB75N2/A/B
Build Date and Time 07/25/2014 11:22:33
PCHI Information
Intel PCH SKU Name B75
Processor Information
Genuine Intel(R) CPU @ 2.40GHz
Name IvyBridge
Frequency 2400 MHz
Processor ID 306a5
Stepping K0/M0
Number of Processors 2Core(s) / 4Thread(s)
Microcode Revision 7
GT Info GT2 (900 MHz)
Set the Date. Use Tab to switch between Date elements.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1229. Copyright (C) 2012 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced HW Monitor Chipset Boot Security Save & Exit
Name IvyBridge
Frequency 2400 MHz
Processor ID 306a5
Stepping K0/M0
Number of Processors 2Core(s) / 4Thread(s)
Microcode Revision 7
GT Info GT2 (900 MHz)
IGFX VBIOS Version 2137
Memory RC Version 1.7.0.0
Total Memory 8192 MB (DDR3)
Memory Frequency 1600 Mhz
ME FW Version 8.0.13.1502
ME Firmware SKU 1.5MB
System Date [Wed 01/01/2014]
System Time [11:22:33]
Access Level Administrator
Set the Time. Use Tab to switch between Time elements.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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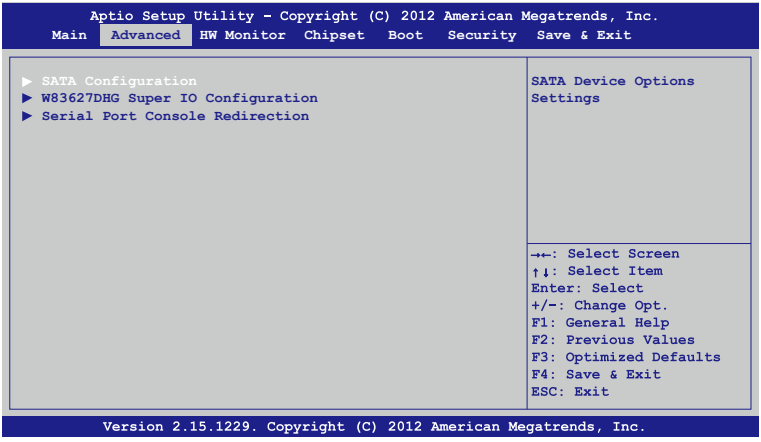
Note: *Listed at the bottom of the menu are the control keys. If you need any help with the item fields, you can press <**F1**> key, and it will display the relevant information.*

- **System Date**
  Set the system date. Note that the 'Day' automatically changes when you set the date.
- **System Time**
  Set the system time.

3.2. Advanced Setup


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced HW Monitor Chipset Boot Security Save & Exit
▶ SATA Configuration
▶ W83627DHG Super IO Configuration
▶ Serial Port Console Redirection
SATA Device Options Settings
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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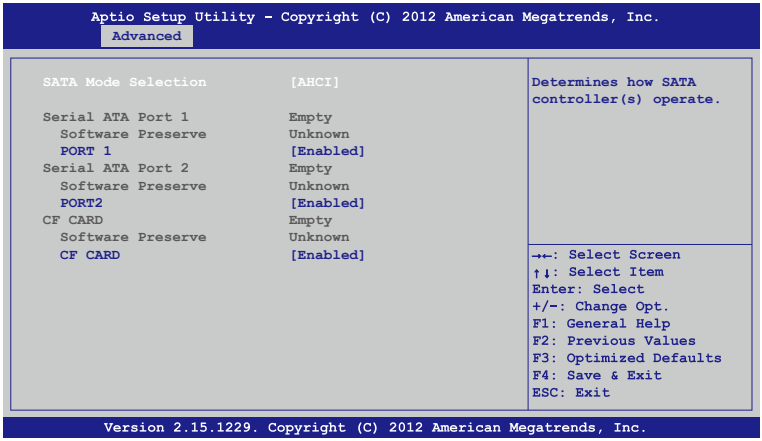
- **SATA Configuration**
  SATA Device Options Settings.

- **W83627DHG Super IO Configuration**
  System Super IO Chip Parameters.
- **Serial Port Console Redirection**
  Serial Port Console Redirection.

3.2.1. SATA Configuration

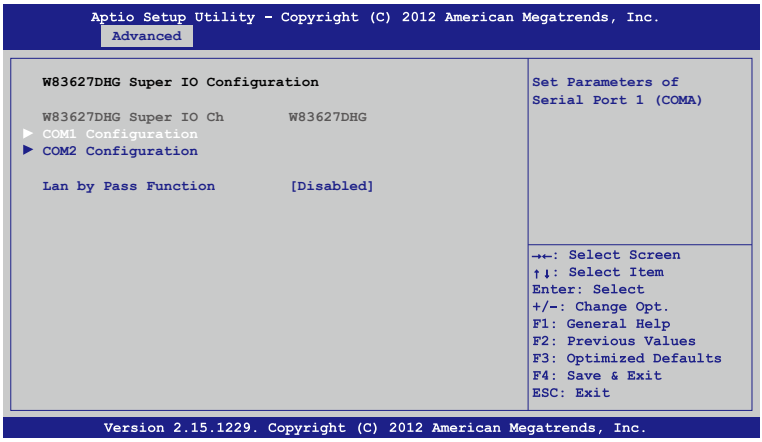
SATA Device Options Settings.



- **SATA Mode Selection**
  Determines how SATA controller(s) operate.
- **PORT 1**
  Enable or Disable SATA Port.
- **PORT 2**
  Enable or Disable SATA Port.
- **CF CARD**
  Enable or Disable SATA Port.

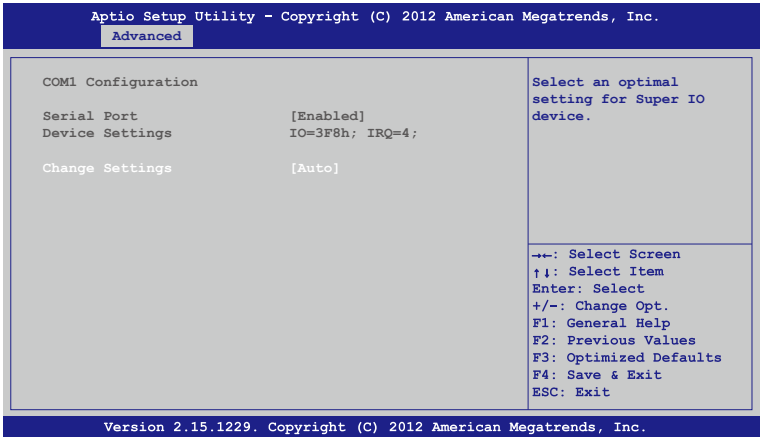
3.2.2. W83627DHG Super IO Configuration

System Super IO Chip Parameters.



- **COM1 Configuration**
  Set Parameters of Serial Port 1 (COMA)
- **COM2 Configuration**
  Set Parameters of Serial Port 2 (COMB)
- **LAN by Pass Function**
  Enable or Disable LAN by pass function.

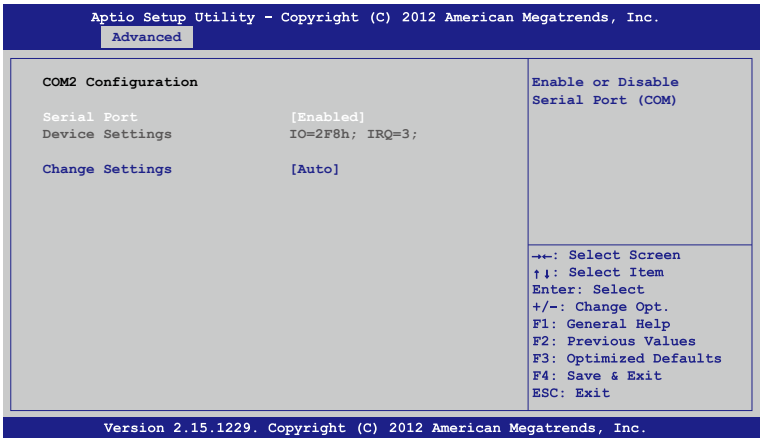
3.2.2.1. COM1 Configuration



- **Change Settings**

Options	Description
Auto	Select an optimal setting for Super IO device.
IO=2F8h; IRQ=3;	
IO=3F8h; IRQ=3,4,5,6,7,10,11,12;	
IO=2F8h; IRQ=3,4,5,6,7,10,11,12;	
IO=3E8h; IRQ=3,4,5,6,7,10,11,12;	
IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	

3.2.2.2. COM2 Configuration

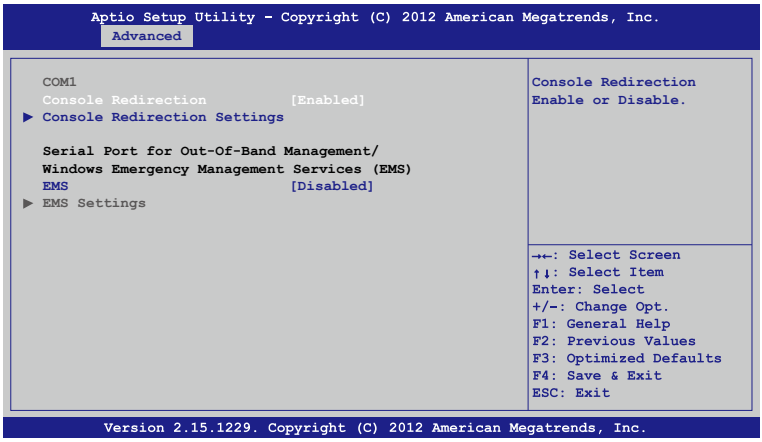


- **Change Settings**

Options	Description
Auto	Select an optimal setting for Super IO device.
IO=2F8h; IRQ=3;	
IO=3F8h; IRQ=3,4,5,6,7,10,11,12;	
IO=2F8h; IRQ=3,4,5,6,7,10,11,12;	
IO=3E8h; IRQ=3,4,5,6,7,10,11,12;	
IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	

3.2.3. Serial Port Console Redirection

Serial Port Console Redirection.



- **Console Redirection**

Options	Description
Disabled / Enabled	Console Redirection Enable or Disable.

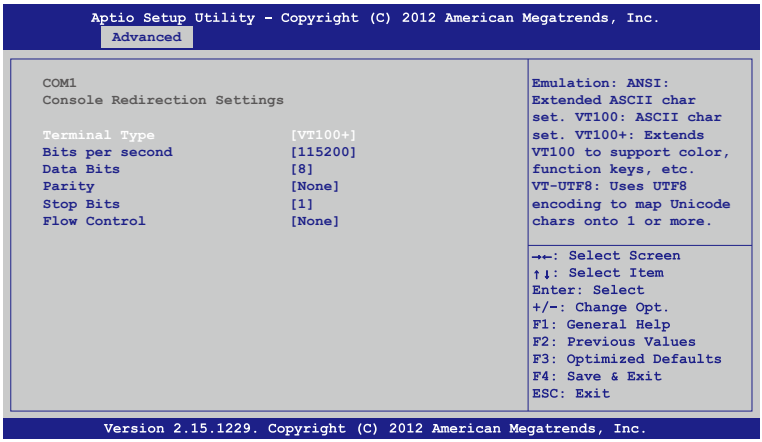
- **Console Redirection Settings**
  The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

- **EMS**

Options	Description
Disabled / Enabled	Windows emergency management service

- **EMS Settings**
  The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

3.2.3.1. Console Redirection Settings


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Advanced
COM1
Console Redirection Settings
Terminal Type [VT100+]
Bits per second [115200]
Data Bits [8]
Parity [None]
Stop Bits [1]
Flow Control [None]
Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1229. Copyright (C) 2012 American Megatrends, Inc.

- **Terminal Type**

Options	Description
VT100 / VT100+ / VT-UTF8 / ANSI	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more.

- **Bits per second**

Options	Description
9600 / 19200 / 38400 / 57600 / 115200	Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

- **Data Bits**

Options	Description
7 / 8	Data Bits

- **Parity**

Options	Description
None / Even / Odd / Mark / Space	A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of 1's in the data

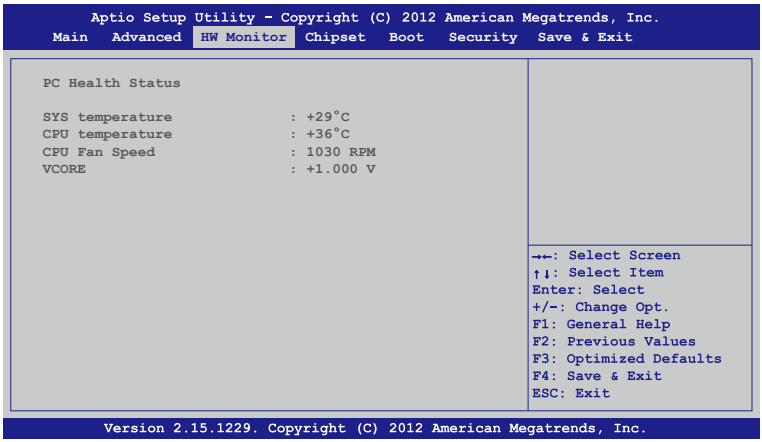
- **Stop Bits**

Options	Description
1 / 2	Stop bits indicate the end of a serial data packet. (A start bit indicates the standard setting is 1 stop bit. Communication with slow devices may require more than 1.

- **Flow Control**

Options	Description
None / Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow.

3.3. HW Monitor Setup


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced HW Monitor Chipset Boot Security Save & Exit
PC Health Status
SYS temperature : +29°C
CPU temperature : +36°C
CPU Fan Speed : 1030 RPM
VCORE : +1.000 V
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1229. Copyright (C) 2012 American Megatrends, Inc.

- **SYS temperature**

  This item displays the System temperature

- **CPU temperature**

  This item displays the CPU temperature

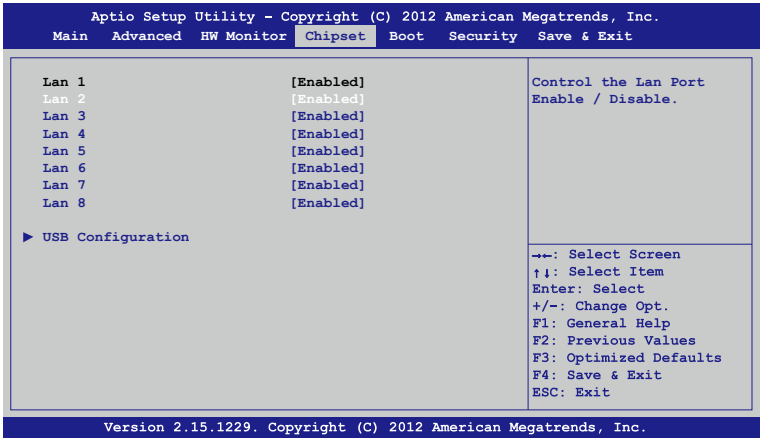
- **CPU Fan Speed**

  This item displays the CPU fan speed

- **VCORE**

  This item displays the VCORE voltage.

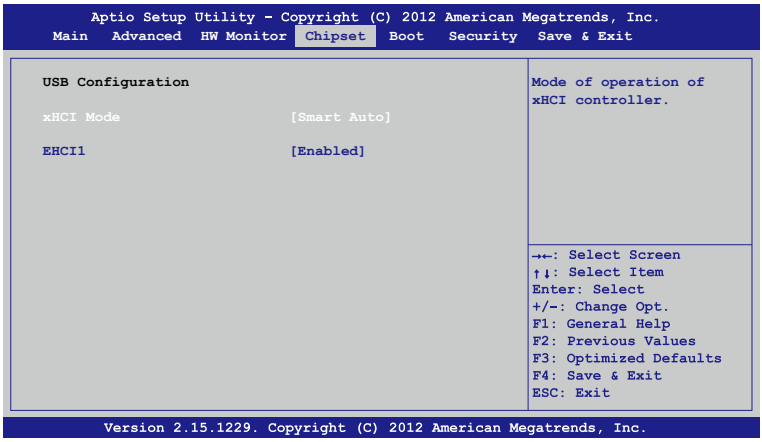
3.4. Chipset Setup



- **Lan 1 ~ Lan 8**

Options	Description
Disabled / Enabled	Control the LAN Port Enable / Disable.

3.4.1. USB Configuration


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced HW Monitor Chipset Boot Security Save & Exit
USB Configuration
xHCI Mode [Smart Auto]
EHCI1 [Enabled]
Mode of operation of
xHCI controller.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1229. Copyright (C) 2012 American Megatrends, Inc.

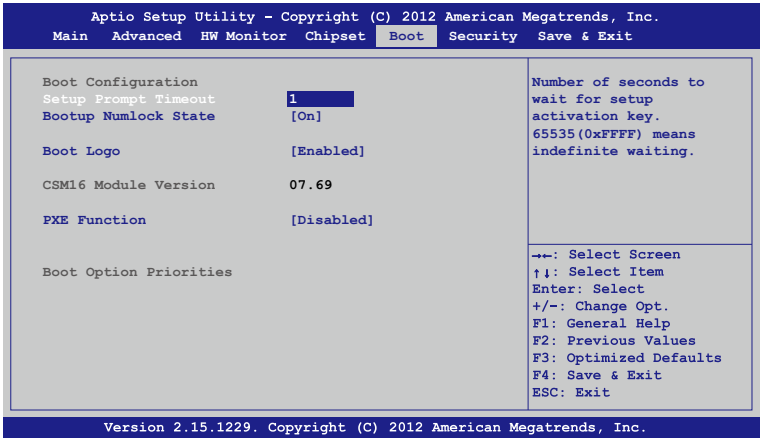
- **xHCI Mode**

Options	Description
Smart Auto / Auto / Disabled / Enabled	Mode of operation of xHCI controller.

- **EHCI1**

Options	Description
Disabled / Enabled	Control the USB EHCI (USB 2.0) functions. One EHCI controller must always be enabled.

3.5. Boot Setup


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced HW Monitor Chipset Boot Security Save & Exit
Boot Configuration
Setup Prompt Timeout 1
Bootup Numlock State [On]
Boot Logo [Enabled]
CSM16 Module Version 07.69
PXE Function [Disabled]
Boot Option Priorities
Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1229. Copyright (C) 2012 American Megatrends, Inc.

- **Setup Prompt Timeout**

Options	Description
N/A	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

- **Bootup NumLock State**

Options	Description
On / Off	Select the keyboard NumLock state

- **Boot Logo**

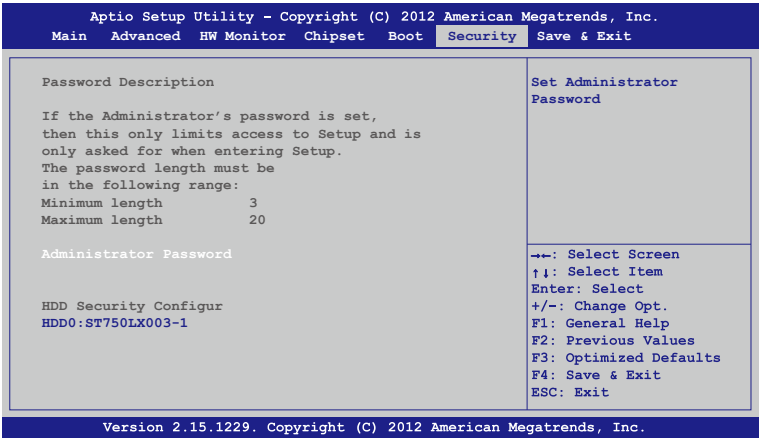
Options	Description
Disabled / Enabled	Enables or disables Quiet Boot option

- **PXE Function**

Options	Description
Disabled / Enabled	Controls the execution of UEFI and Legacy PXE OpROM

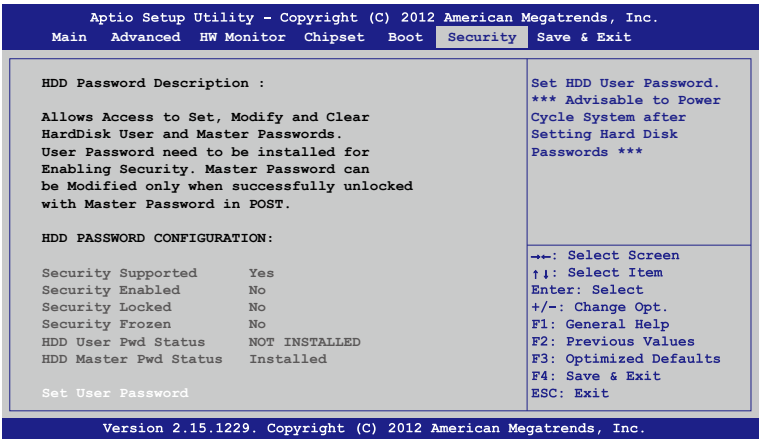
- **Boot Option Priorities**
  Set th esystem boot order.

3.6. Security Setup


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced HW Monitor Chipset Boot Security Save & Exit
Password Description
If the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. The password length must be in the following range:
Minimum length 3
Maximum length 20
Administrator Password
HDD Security Configur
HDD0:ST750LX003-1
Set Administrator Password
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1229. Copyright (C) 2012 American Megatrends, Inc.

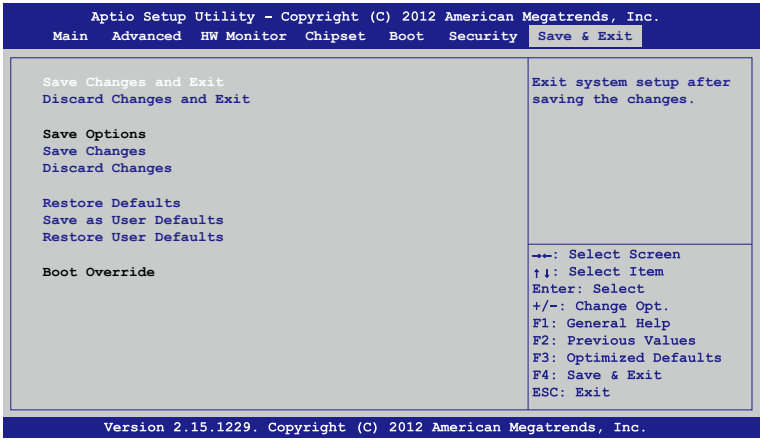
- **Administrator Password**
  Set the administrator password
- **HDD module name**
  Set HDD password (It will show the HDD model, if you have connected the HDD.)

3.6.1. HDD Password Description


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced HW Monitor Chipset Boot Security Save & Exit
HDD Password Description :
Allows Access to Set, Modify and Clear HardDisk User and Master Passwords. User Password need to be installed for Enabling Security. Master Password can be Modified only when successfully unlocked with Master Password in POST.
HDD PASSWORD CONFIGURATION:
Security Supported Yes
Security Enabled No
Security Locked No
Security Frozen No
HDD User Pwd Status NOT INSTALLED
HDD Master Pwd Status Installed
Set User Password
Set HDD User Password. *** Advisable to Power Cycle System after Setting Hard Disk Passwords ***
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1229. Copyright (C) 2012 American Megatrends, Inc.

- **Set HDD Password**
  Set HDD User Password. *** Advisable to Power Cycle System after setting Hard Disk Passwords ***

3.7. Save & Exit Setup



- **Save Changes and Exit**
  Exit system setup after saving the changes.
- **Discard Changes and Exit**
  Exit system setup without saving any changes.
- **Save Changes**
  Save Changes done so far to any of the setup options.
- **Discard Changes**
  Discard Changes done so far to any of the setup options.
- **Restore Defaults**
  Restore/Load Default values for all the setup options.
- **Save as User Defaults**
  Save the changes done so far as User Defaults.
- **Restore User Defaults**
  Restore the User Defaults to all the setup options.

4. Software Installation and Programming Guide

4.1. Introduction

4.1.1. GPIO

4.1.1.1. Overview

ANR-IB75N2 Series provides GPIO interface.Users can use the GPIO APIs to Control GPO Pin.

4.1.2. Watchdog

4.1.2.1. Overview

ANR-IB75N2 Series provides a Watchdog timer. Users can use the Watchdog APIs to configure and to access the Watchdog timer. The Watchdog timer can be set to 1~255 seconds. Setting the timer to zero disables the timer. The remaining seconds of the timer to reboot can be read from the timer.

4.1.3. LAN Bypass Subsystem

4.1.3.1. Overview

Two pairs of LAN ports on ANR-IB75N2 Series implement the bypass function. Users can invoke the LAN Bypass APIs to control the bypass states of the LAN ports.

4.1.4. LCD

4.1.4.1. Overview

The LCM (short for LCD Control Module) APIs provide interfaces to control the module. By invoking these APIs, programmers can implement the applications which have the functions listed below:

1. **Clear LCD screen.**
2. **Turn on or off the cursor on the screen.**
3. **Move the cursor on the screen.**
4. **Turn on or off the text on the screen.**
5. **Get the identification of the pressed key of the LCM.**
6. **Show the text on the screen.**

4.2. File Descriptions

4.2.1. GPIO/Watchdog/LAN Bypass Subsystem/LCM

1. **Libw83627.h**
   This file includes the declarations of the APIs and macro definitions.
2. **Makefile**

4.3. API List and Descriptions

4.3.1. GPIO

Syntax:	**Get_gpi_status(int pin)**
Description:	Get the status of GPIO input pins and output pins status.
Parameters:	This function takes a pointer to an unsigned char variable as the parameter. The pin0 ~ pin3 is the status of the input pins.
Return Value:	1:HIGH, 0:LOW.

Syntax:	**Get_gpo_status(int pin)**
Description:	Get the status of GPIO output pins status.
Parameters:	This function takes a pointer to an unsigned char variable as the parameter. The pin0 ~ 3 is the status of the output pins.
Return Value:	1:HIGH, 0:LOW

Syntax:	**Set_gpo(int pin, int value)**
Description:	Set the status of GPIO Output value.
Parameters:	Set value 0 is Low, 1 is High.
Return Value:	If the function sets the values successfully, it returns 0 or -1, any other returned value stands for error.

4.3.2. Watchdog

Syntax:	**Void wdt_start(int _timevalue)**
Description:	This function read the value of the watchdog time counter.
Parameters:	The parameter ‘val’ is the value to set to watchdog timer register. The range is 1 ~ 255.

Return Value:	This function return the value of the time counter and return it to the caller as an unsigned integer.

Syntax:	**Int get_wdt_count(void)**
Description:	This function get the watchdog timer register to the value 'val' and starts to count down.
Parameters:	None.
Return Value:	This function returns the value of the time counter.

Syntax:	**Void wdt_stop(void)**
Description:	This function sets the watchdog timer stop
Parameters:	None.
Return Value:	None.

4.3.3. LAN Bypass Subsystem

1. **void enableWtd(void)**
   Enable Watchdog Timer. (This timer is different from the System Watchdog timer).
2. **void disableWtd(void)**
   Disable Watchdog Timer.
3. **void reloadWtd(void)**
   Reload Watchdog Timer.
4. **void forceNormal(void)**
   Force the port to become normal state.
5. **void forceBypass(void)**
   Force the port to become bypass state.
6. **void setWtd4(void)**
   Set the watchdog timer to 4 seconds.
7. **void setWtd8(void)**
   Set the watchdog timer to 8 seconds.
8. **void setWtd16(void)**
   Set the watchdog timer to 16 seconds.
9. **void setWdt32(void)**
   Set the watchdog timer to 32 seconds.

4.3.4. LCM

4.3.4.1. Type Definitions

Typedef	char	i8;
Typedef	unsigned char	u8;
Typedef	short	i16;
Typedef	unsigned short	u16;
Typedef	unsigned long	u32;
Typedef	int	i32;

4.3.4.2. LCD Control Module

1. **i32 clrscrLcm(void)**

   Description: Clear the screen of the LCM.

   Return value: 0 after the screen is cleared.

2. **i32 cursorLcm(bool mode)**

   Description: According to the argument ‘mode’, show the cursor on the LCM screen or eliminate the cursor on the LCM screen. The position of the cursor is unchanged.

   mode = true, show the cursor.

   mode = false, eliminate the cursor.

   Return value: 0 after the cursor has been shown or eliminated.

3. **i32 cursorActionLcm(i32 type)**

   Description: According to the argument ‘type’, move the cursor to the indicated position. The displayed text is not altered.

   type = HOME, move the cursor to row 0, column 0.

   type = MOVERIGHT, move the cursor to the column which is to the right of its original position if the original column < 15.

   type = MOVELEFT, move the cursor to the column which is to the left of its original position if the original column > 0.

   type = MOVEBACK, move the cursor to the column which is to the left of its original position and delete the character at the new position if the original column > 0.

   Return value: 0 after the cursor is moved.

4. **i32 displayLcm(bool mode)**

   Description: Show the text on the LCM screen or eliminate the text on the LCM screen. The content of the text is not altered.

mode = true, show the text.

mode = false, eliminate the text.

Return value: 0 after the text has been shown or eliminated.

5. **i32 getKeyLcm(void)**

   Description: Scan the LCM and return the identification of the pressed direction key.

   Return value: 'UP' if the 'up' direction key is pressed.

   'RIGHT' if the 'right' direction key is pressed.

   'LEFT' if the 'left' direction key is pressed.

   'DOWN' if the 'down' direction key is pressed.

   'NONE' if none of the keys is pressed.

6. **i32 getPositionLcm(i32 *row, i32 *column)**

   Description: Get the position of the cursor and write the coordinate to the memory pointed at by arguments 'row' and 'column'.

   Return value: 0 if the request for the coordinate has been served.

7. **i32 setPositionLcm(i32 row, i32 column)**

   Description: Set the position of the cursor according to the arguments 'row' and 'column'.

   Return value: 0 after the position has been set.

   -1 if the argument 'row' or 'column' meets any of the following conditions:

   (1) row is not 0.

   (2) row is not 1.

   (3) column is less than 0.

   (4) column is greater than 15.

8. **i32 showLcm(i32 length, u8 *info)**

   Description: Start from the current position of the cursor; print the text pointed at by 'info' to the LCM screen. The number of characters to be printed is at most 'length'. If the remaining columns available for printing the text is less than 'length', the number of the characters to be printed is:

   16 – (column number of the current position of the cursor).

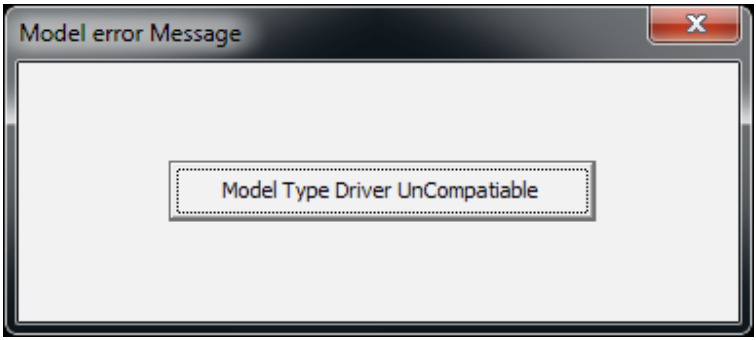
   Return value: 0 after the text is printed.

5. Driver and Utility Installation

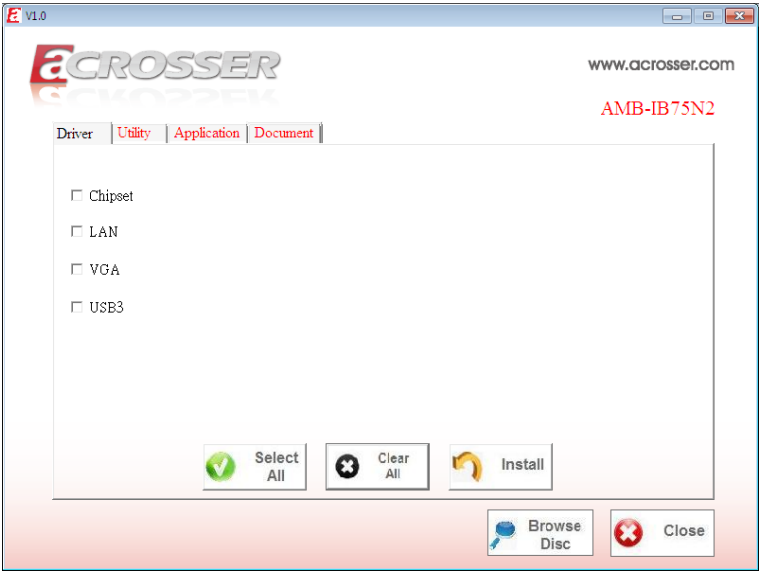
5.1. Driver CD Interface Introduction

Acrosser provides a Driver CD compiled with all the drivers, utilities, applications and documents this product may need. For Windows environment, it can be guided by the setup program automatically. For Linux environment, the related files can be found at folder “IB75N2\Linux”.

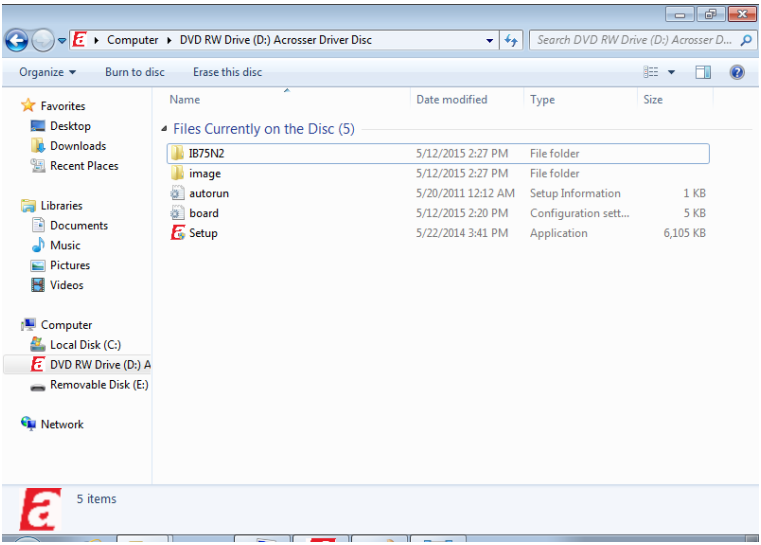
Put the Driver CD into your CD-ROM drive. The Driver CD will automatically detect the mainboard information to see if they are matched. The following error messages appear if you use an incorrect Driver CD version with your mainboard. Please find the correct Driver CD to proceed.



Put the correct Driver CD of your mainboard into your CD-ROM drive. The following installation screen should appear.

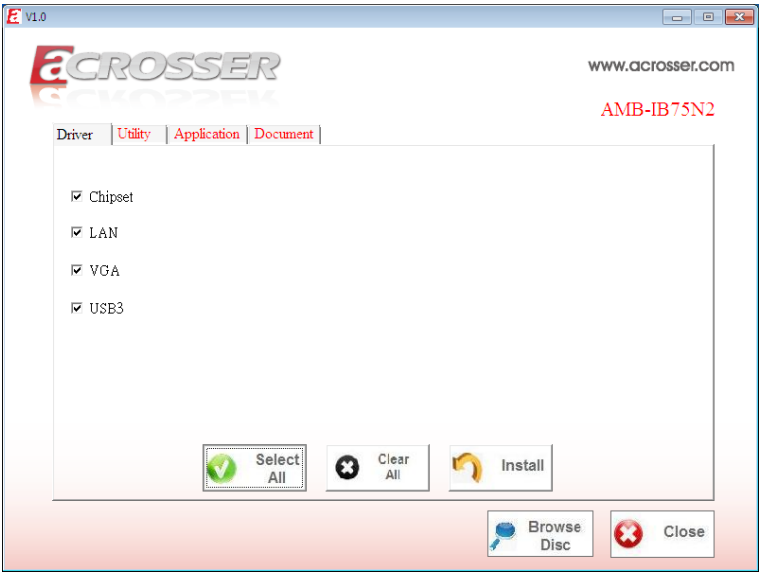


If not, enter the root folder of the Driver CD, run the excution file "**Setup.exe**".



5.2. Driver Installation Page

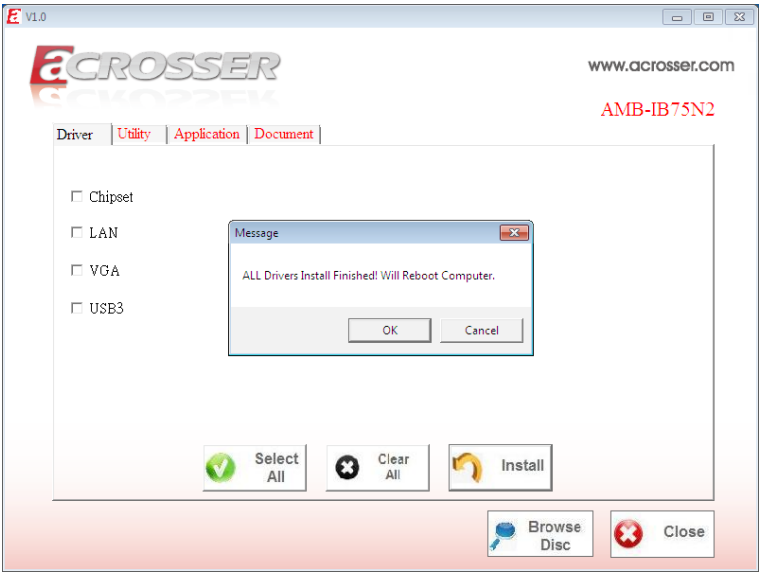
Step 1: Select the "**Driver**" tab. Click the "**Select All**" button to select all the driver checkboxes, and then click "**Install**" button to start installing all the selected drivers.



*Note: Select the "**Clear All**" button will clear all the selections, and then you can select the driver you want to install one by one, but the "**Chipset**" driver has to be installed before installing all the others.*

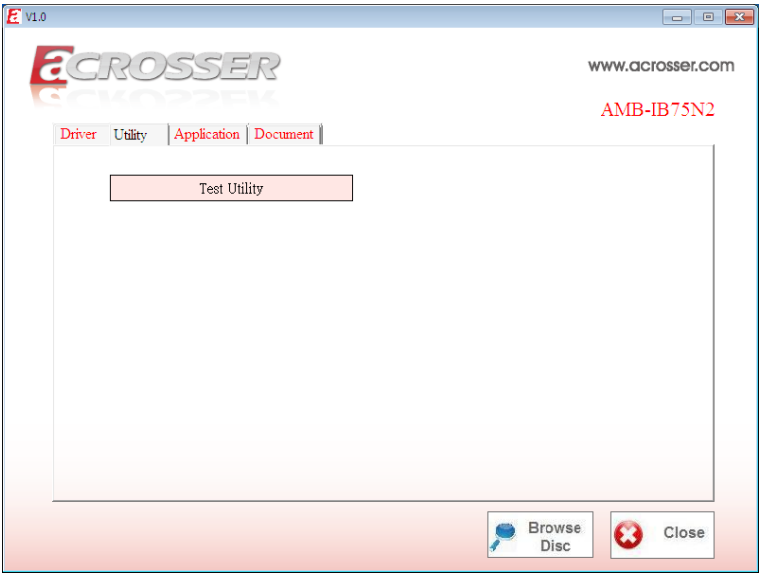
Step 2: The driver installation started.

Step 3: The driver installation finished. The configuration will be valid after reboot.



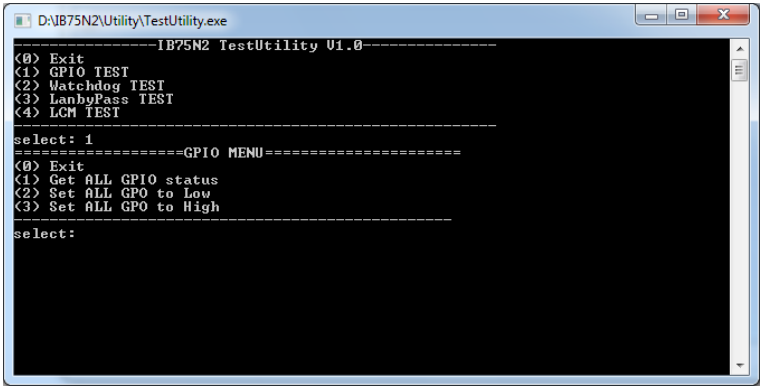
5.3. Utility Installation Page

Step 1: Select the “**Utility**” tab. Click the “**Test Utility**” box.

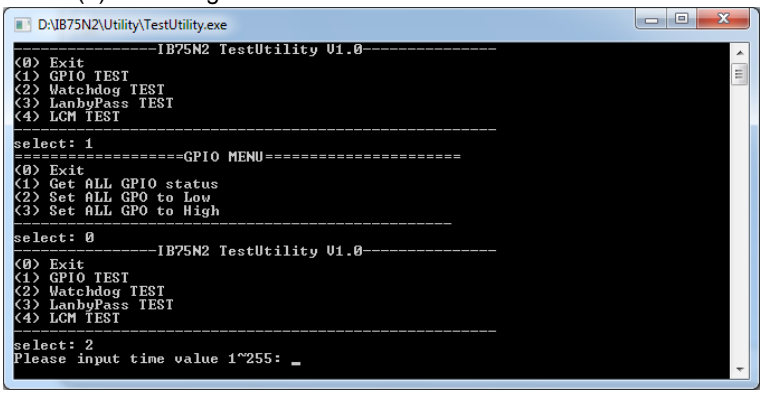


Step 2: The “Test Utility” screen appears.

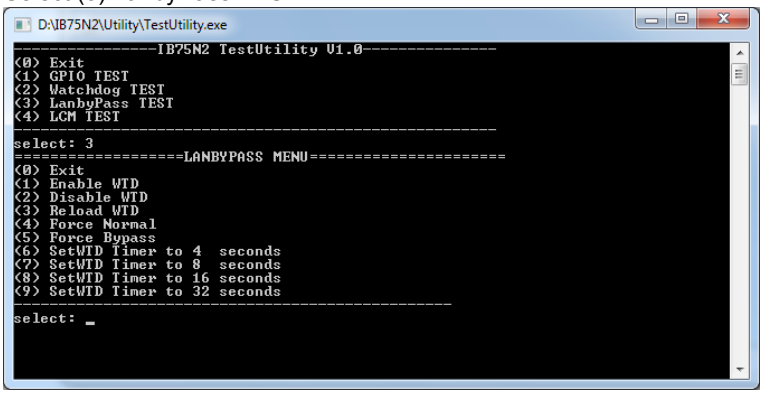
Select (1) GPIO TEST:



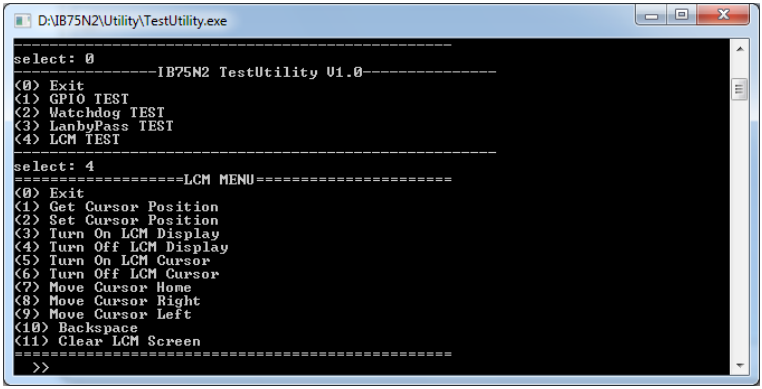
Select (2) Watchdog TEST:



Select (3) LanbyPass TEST:

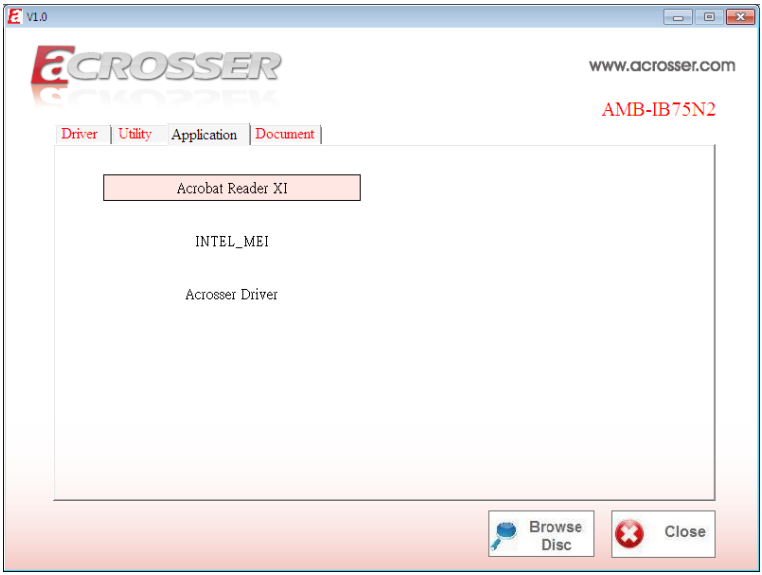


Select (4) LCM TEST:

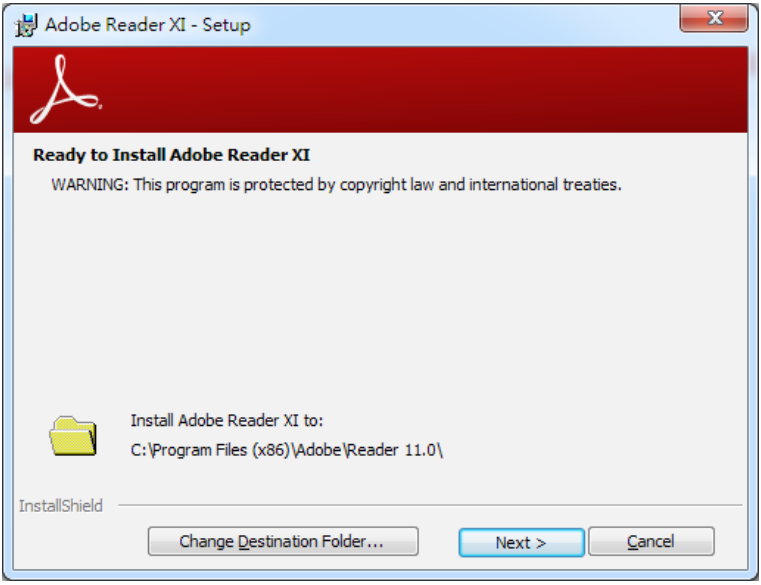


5.4. Application Installation Page

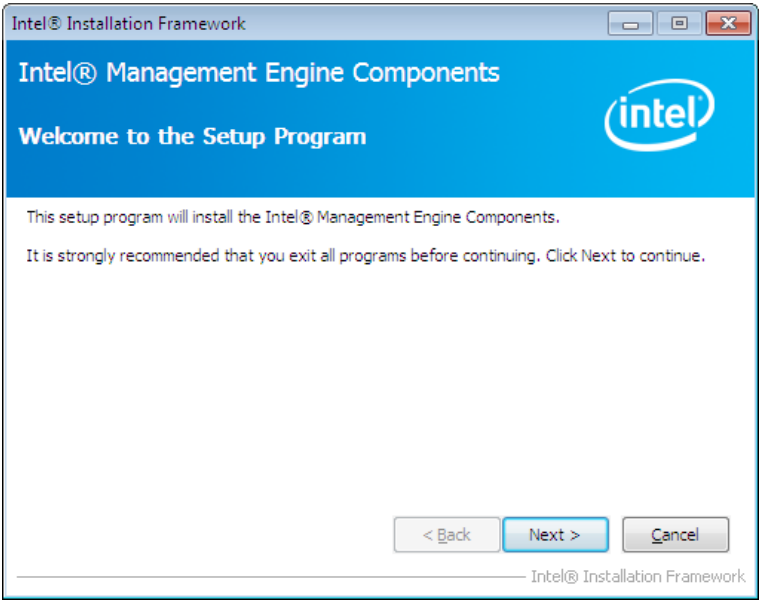
Step 1: Select the "**Application**" tab. Click the "**Acrobat Reader XI**" box.



*Note: The "**Acrobat Reader**" is necessary for reading the user manual in PDF file format.*

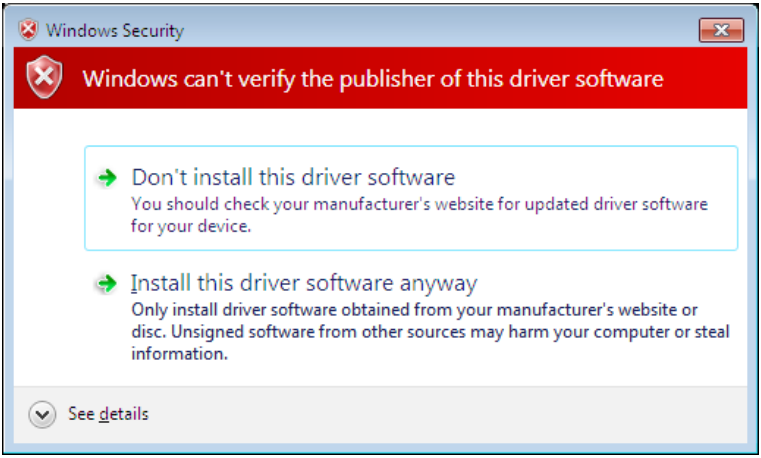

Adobe Reader XI - Setup
Ready to Install Adobe Reader XI
WARNING: This program is protected by copyright law and international treaties.
Install Adobe Reader XI to:
C:\Program Files (x86)\Adobe\Reader 11.0\
InstallShield
Change Destination Folder...
Next >
Cancel

Step 2: Install "**Intel_MEI**" components driver.

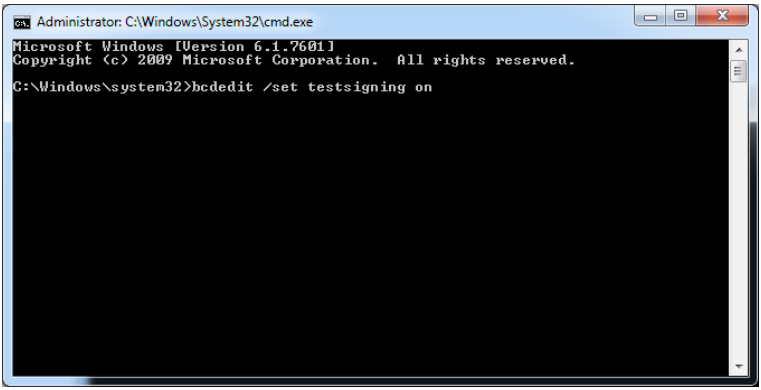

Intel® Installation Framework
Intel® Management Engine Components
Welcome to the Setup Program
intel
This setup program will install the Intel® Management Engine Components.
It is strongly recommended that you exit all programs before continuing. Click Next to continue.
< Back
Next >
Cancel
Intel® Installation Framework

Step 3: Install "**Acrosser Driver**" into the system. Windows OS will create "**AcroDev**" device.

If the “Windows Security” warning message appears, select “**Install this driver software anyway**” to go on next step.


Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

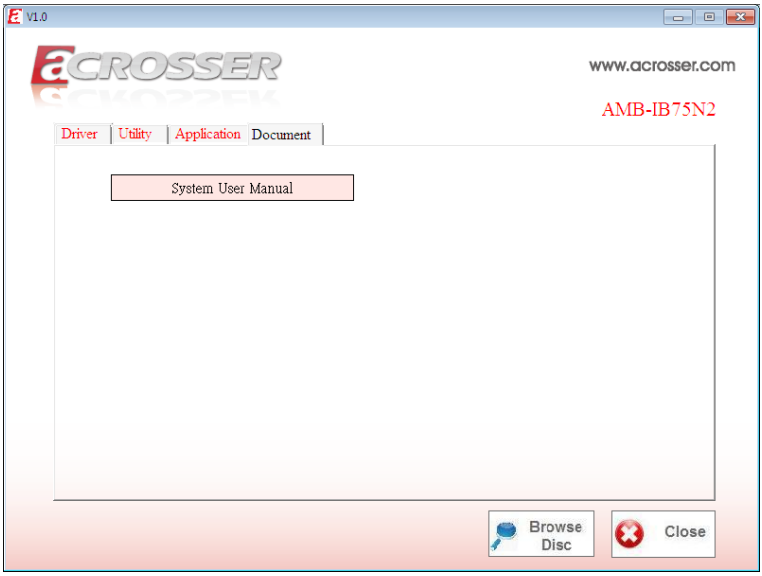
For Windows 64-bit OS, enter the cmd.exe command, type “**bcdedit /set testsigning on**” to enter the Windows test mode.


Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Windows\system32>bcdedit /set testsigning on

Reboot the system after executed this command.

5.5. Document Page

The user manual is stored in the "**Document**" folder.



*Note: To read the PDF file, you will have to install "**Acrobat Reader**" first. Please refer to the "**Application Installation Page**".*

6. FAQ

Q 1. Select AHCI or IDE mode for SATA?

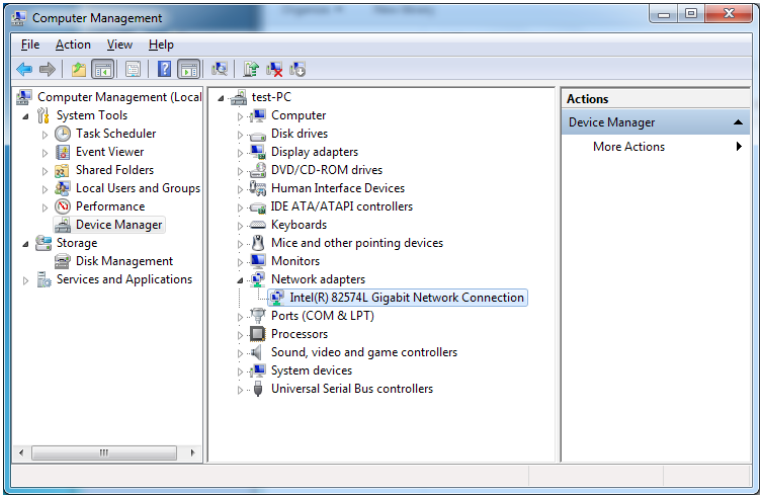
- There are 2 SATA modes to select --- AHCI & legacy IDE mode. When you use the Linux, We strongly suggest to use AHCI mode. For legacy IDE mode, we found some SATA HDD could have compatibility issue. Please confirm the BIOS setting is correct, thank you.

Q 2. Does my system support Windows 8?

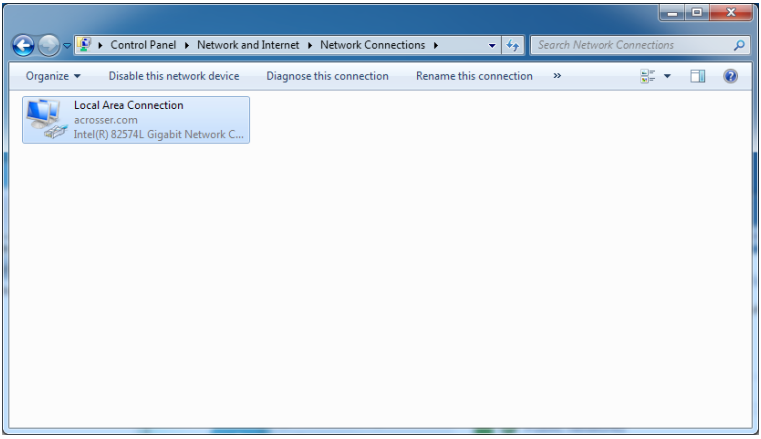
- This system is designed and verified with Windows 7, Fedora 14 and Ubuntu 10. Acrosser did not verify this system with Windows 8. Please contact Acrosser local sales representative or authorized channels to help you confirm whether a new Windows 8 driver is provided.

Q 3. Why my system can not connect to Internet?

- Make sure the network adapter can be recognized in Device Manager.
- If there is question mark or exclamation mark in the network adapter, please re-install the network driver.
- If the problem still exist, please contact Acrosser FAE or sales representative for testing.



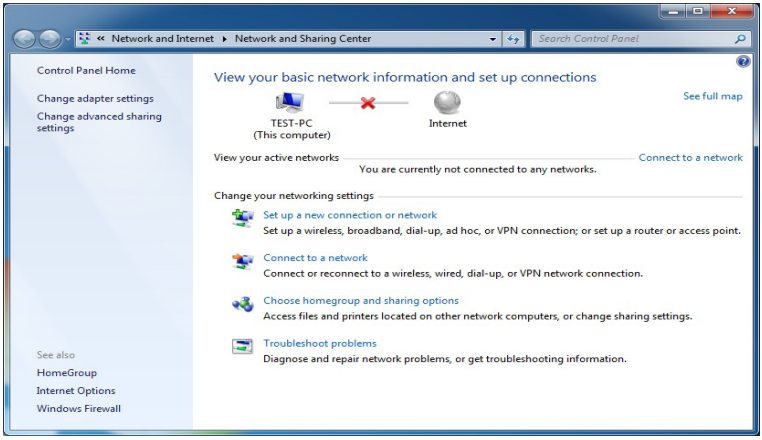
- Make sure the Network Connections/Local Area Connection is enabled (right click and choose “Enable”).



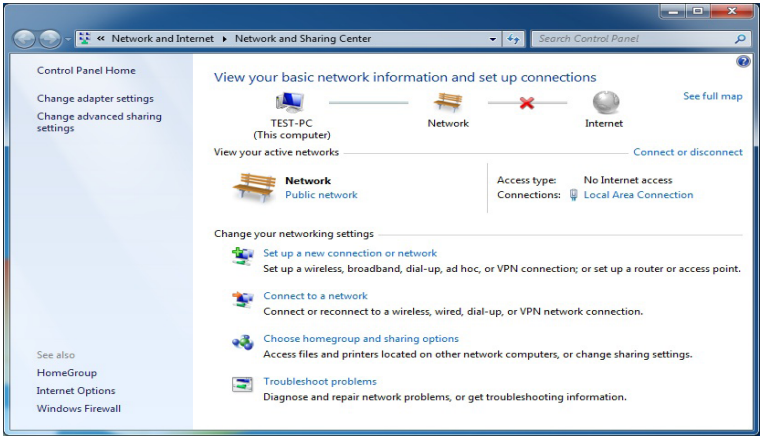
- If the problem still exist, please shut down the firewall and anti-virus software.

Control Panel ▸ System and Security ▸ Windows Firewall
Search Control Panel
Control Panel Home
Allow a program or feature through Windows Firewall
Change notification settings
Turn Windows Firewall on or off
Restore defaults
Advanced settings
Troubleshoot my network
See also
Action Center
Network and Sharing Center
Help protect your computer with Windows Firewall
Windows Firewall can help prevent hackers or malicious software from gaining access to your computer through the Internet or a network.
How does a firewall help protect my computer?
What are network locations?
Home or work (private) networks
Not Connected
Public networks
Connected
Networks in public places such as airports or coffee shops
Windows Firewall state:
On
Incoming connections:
Block all connections to programs that are not on the list of allowed programs
Active public networks:
None
Notification state:
Notify me when Windows Firewall blocks a new program

- If the Network Connections/Local Area Connection show “no connection”, please check your network cable connection.


Network and Internet ▸ Network and Sharing Center
Search Control Panel
Control Panel Home
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connections
See full map
TEST-PC
(This computer)
Internet
View your active networks
Connect to a network
You are currently not connected to any networks.
Change your networking settings
Set up a new connection or network
Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point.
Connect to a network
Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.
Choose homegroup and sharing options
Access files and printers located on other network computers, or change sharing settings.
Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.
See also
HomeGroup
Internet Options
Windows Firewall

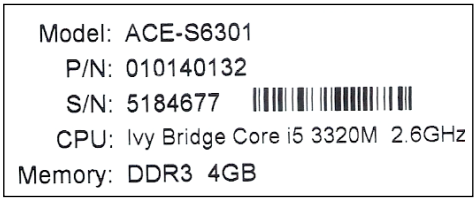
- If the Network Connections/Local Area Connection show “limited connection”, please disable and enable your connection to fix this problem. Or, you can unplug and plug the LAN cable to fix the problem.


Network and Internet ▸ Network and Sharing Center
Search Control Panel
Control Panel Home
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connections
See full map
TEST-PC
(This computer)
Network
Internet
View your active networks
Connect or disconnect
Network
Public network
Access type: No Internet access
Connections: Local Area Connection
Change your networking settings
Set up a new connection or network
Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point.
Connect to a network
Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.
Choose homegroup and sharing options
Access files and printers located on other network computers, or change sharing settings.
Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.
See also
HomeGroup
Internet Options
Windows Firewall

- If the problem still exist, please contact your MIS whether there are any DHCP or IP configuration or ISP/WAN setting limitation.

Q 4. Where is the serial number located on my system?

- The serial number (S/N) is an alpha-numeric character located on the bottom or side chassis.



(for reference only)

Technical Support Form

We deeply appreciate your purchase of Acrosser products. Please find the "**tech_form.doc**" file in our utility CD. If you have any questions or problems about Acrosser products, please fill in the following information. We will answer your questions in the shortest time possible.

Describe Your Info and Acrosser System Info

- Your Company Name: _____
- Your Contact Info: _____ Phone Number: _____
- Your E-Mail Address: _____
- Your Company Address: _____

  _____
- Acrosser Model Name: _____
- Acrosser Serial Number: _____

Describe System Configuration

- CPU Type: _____
- Memory Size: _____
- Storage Device (e.g. HDD, CF, or SSD): _____
- Additional Peripherals (e.g. Graphic Card): _____
- Operating System & Version (e.g. Windows 7 Embedded): _____
- Special API or Driver: _____

  (If yes, please provide it for debug.)
- Running Applications: _____
- Others: _____

Describe Your Problems or Questions:

Send the above information to one of the following Acrosser contacts:

- Acrosser Local Sales Representative
- Acrosser Authorized Sales Channels
- Acrosser Inquiry --- http://www.acrosser.com/inquiry.html
- Acrosser FAX Number --- 886-2-29992887

To Make Your
Embedded
Idea a Reality

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